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ABSTRACT

Along with the history and objectives of the Survey of Graduate Science Student Support and Postdoctorals (SGSSSP), the general trend for federal support for scientific research is presented. The first formal program designed specifically to support graduate students began in 1952. At its peak, in 1968, more than 50,000 graduate students received federal support. Presently, the trend for federal support has been away from fellowships, traineeships, and training grants, and toward increased support of research assistantships. Relating to the SGSSSP, the author notes that the Survey provides the only statistical time series of the sources of support of graduate students. The Survey distinguishes between types and sources of financial support, whether private or public. The SGSSSP dates back to 1967 and has had increased coverage of clinical and medical sciences since 1973. Starting in the fall of 1974, a quick response component was added which enabled limited data to be available by January 1975. Also presented are analytical uses of Survey data. (Author/CP)

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The History and Objectives of the Survey of Graduate Science Student Support and Postdoctorals

by

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Introduction

Graduate education and academic science recently have been scrutinized by commissions, task forces, and national boards. Statements from these groups indicate a diminishing of the traditional arguments for Federal contributions to academic research on grounds of elevating cultural, social, and economic development: instead, other urgent socio-economic problems have been stressed--energy, the environment, and law enforcement. The more than two decades of rapid growth in graduate education has also been subjected to public debate. During that period, the number of institutions awarding the doctoral degree has doubled, enrollment in graduate programs increased four-fold, and the number of doctoral degrees awarded increased seven times. Now rather than just expansion, advanced education is dicussed in terms of effectiveness such as supply and demand, utilization in areas of social need, productivity, and barriers to the entry of women and minorities.

In the course of these social and economic developments, the growth of Federal funds for academic science has lessened. Aid to students and institutional support have been reduced. And all of you are aware, I am sure, of the recent shifts in Federal policy concerning support of graduate education--away from fellowships, traineeships and training grants--toward increased support of research assistantships.

The first formal program designed specifically to support graduate students, the NSF fellowship program, began in 1952. Large scale Federal programs for graduate student support began in 1958 with passage of the National Defense Education Act. The programs peaked in 1968 with more than 50,000 graduate students receiving Federal support. The largest Federal programs were those in NSF for fellowships and traineeships, with similar grants from NIH under health manpower appropriations and the NASA traineeship awards. In recent years, the NSF traineeship program has been phased out and fellowships were sharply cut back. No new NDEA fellowship awards

have been made since 1972 and the NASA program has been virtually eliminated. The NIH program, although holding relatively steady, has been the subject of much public discussion and congressional scrutiny.

The Survey Coverage and Federal Policy

How do these social and economic forces relate to the subject of this presentation--the Graduate Student Support Survey? Well, as part of the planning structure of the National Science Foundation, this survey is designed to provide a national data base on the types and sources of student support in all graduate departments in the sciences and engineering. One very significant characteristic of the survey is that it provides important statistics on the effects of new Federal educational policies and the resulting impact on graduate science enrollment. Specifically, the survey provides the only statistical time series of the sources of support of graduate students. And the

information also helps to identify any substitution effects between private and public funds in the support of graduate students enrolled in various fields of science.

In terms of its history, the data series dates back to 1967. At that time, the NSF Graduate Traineeship Program required that application forms be filled out by graduate departments. Then in 1972, a full-scale survey of graduate science departments was launched. When NIH became a partner in the survey in 1973, the coverage was again expanded to all graduate departments in the clinical and medical sciences. By 1974, the survey included approximately 8,000 master's and doctorate departments in about 356 institutions awarding doctorate degrees in science and engineering.

In the two-year history of the survey, institutional response rates of 100 percent were achieved. In the 1973 survey cycle, the forms were mailed out in mid-November 1973, preliminary results covering the fall semester were published in July 1974, and the final statistical tabulations were released in early October 1974.

Data items included in the survey are numbers of full-time graduate students who receive their major support from U. S. Government sources such as DOD, NSF and NIH; non-Government sources such as institutional and family support; major types of support such as fellowships and traineeships, and research and teaching assistantships; the number of women in these various categories; foreign students; first-year enrollment; and, the number of postdoctorals and their sources of support.

A component of the overall survey effort is the Quick Response Sample of graduate departments that was launched this last fall. Early last December, the results of the stratified random sample of 360 graduate departments produced national estimates showing a surprisingly large increase in enrollment in the biological sciences. The statistics were presented at the annual December meeting of the Council of Graduate Schools by my associate, Penny Foster, and they were published by NSF in mid-January 1975 in an NSF "Highlights" series.

The full-scale survey for the fall of 1974 was mailed out at the end of November and we expect to have the published, preliminary results out shortly.

Analytical Uses of the Data and Federal Policy

What are some of the analytical uses of the data? And how do they reflect on Federal policy? Well, Penny Foster will cover this subject in some detail but, generally, the graduate student statistics have been used in briefings before the NSF Director, his Executive Council, and the National Science Board. These briefings concerned the impact of Federal science policy on the enrollment pattern of graduate schools. Later on, the general theme was used in a national programming and budgeting document submitted to the Office of Management and Budget. Similar use of the data by the National Institutes of Health will be described by Jean Taylor.

Another important aspect of the graduate student data is analysis performed by academic researchers. Dr. David Breneman will describe

[illegible]s use of the data to analyze the impact that the funding patterns of Federal agencies have on quality graduate departments. The computer tapes produced by the surveys are made available by NSF to individual researchers and users manuals to access the data are also available.

Throughout, a national advisory committee has guided NSF in planning and conducting the survey and to represent the combined interests of the educational and research communities. It is comprised of graduate deans, representatives of national educational associations, institutional researchers, and experts in educational research.

Future Efforts

Turning now to a short discussion of the future of the survey, present plans call for NSF to continue conducting both the Quick Response Sample of graduate science enrollment and the full-scale survey of graduate science support on an annual basis. In our recent annual survey, we are pleased with our publications record,

and the wide use of the data by researchers. We are indebted to the institutions for their cooperation that resulted in response rates of 100 percent in each year and we expect to continue to provide them with useful statistical information. We have conducted studies of the coverage and reliability of the data and Jim Daley will tell you about our efforts to improve statistical quality.

Concluding Remarks

In conclusion, I have reviewed the history of the Survey of Graduate Support and described generally the uses of these data in analyzing national policy issues in graduate education and the support of academic research. I will turn the program over now to Penny Foster of NSF who will talk about some of the major analytical findings of the survey.